

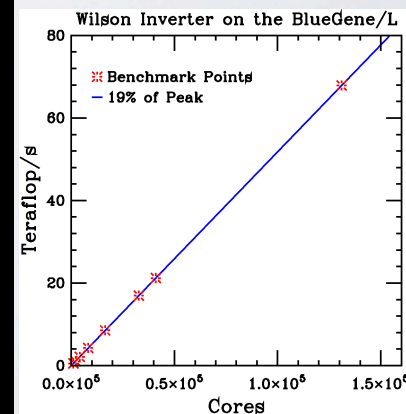
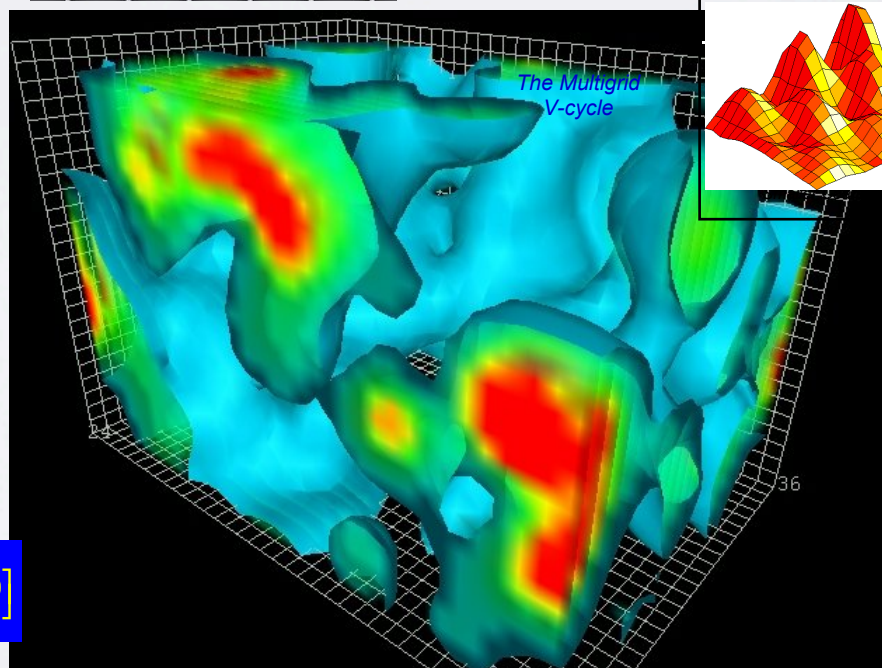
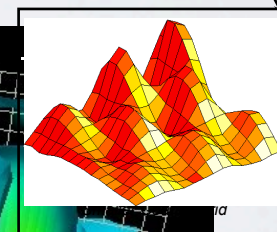
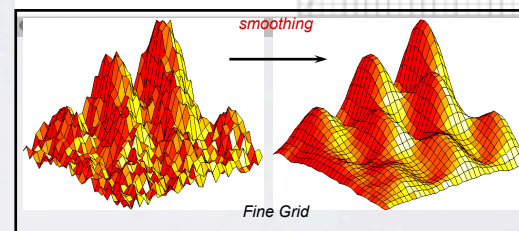
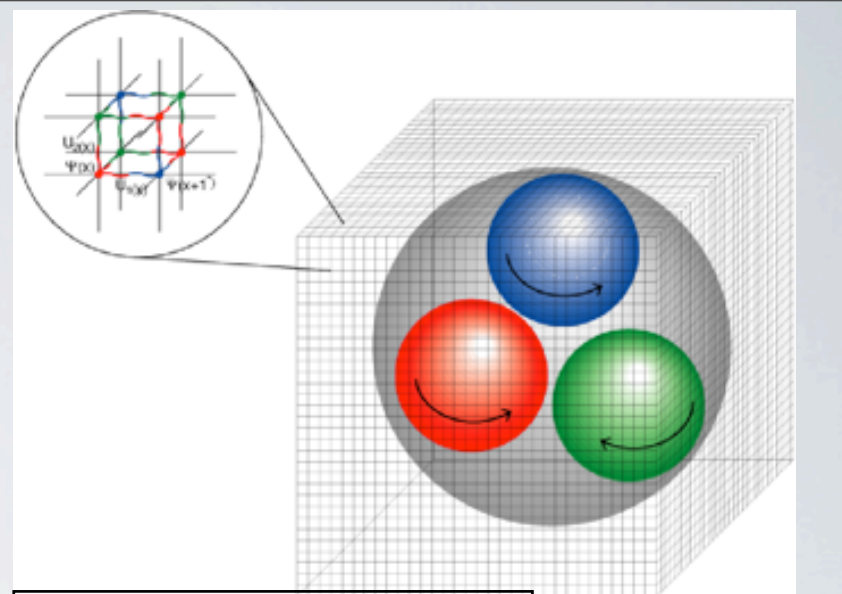
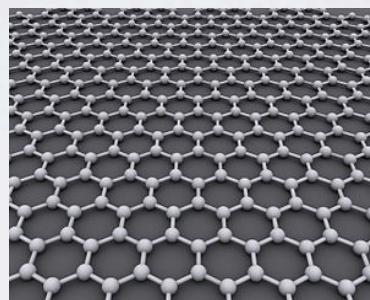
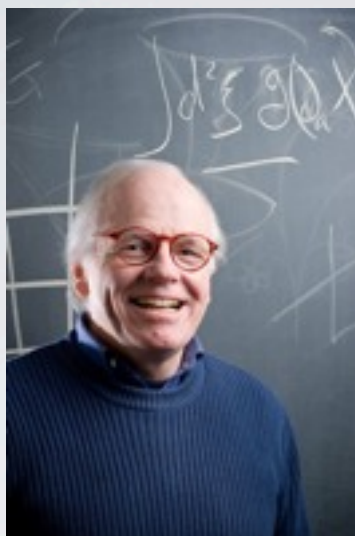
- Prof. **Richard Brower**
theoretical physics

- **SciDAC** Software Co-ordinator & USQCD
Exec Committee

- **Background:** String Theory,
Quantum Field Theory, Stat Mech.
Lattice QCD

- **Numerical Algorithms:**
Monte Carlo: Cluster methods,
Linear Solvers: Multigrid, DD et
Symplectic integrators: High order
and multi-time step

$$D\psi(x) = \frac{1}{2a} \sum_{\mu} [U(x)\psi(x+\hat{\mu}) - U^{\dagger}(x-\hat{\mu})\psi(x-\hat{\mu})]$$



- SciDAC Software API stack

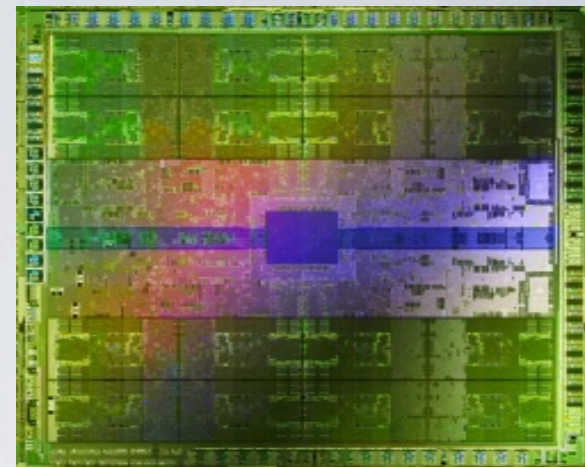
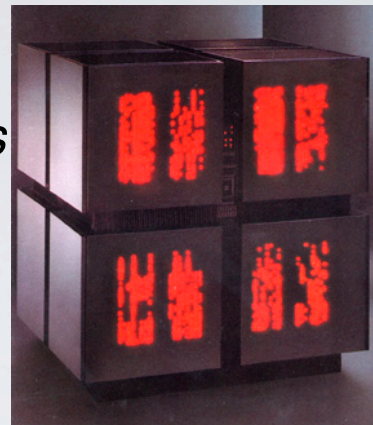
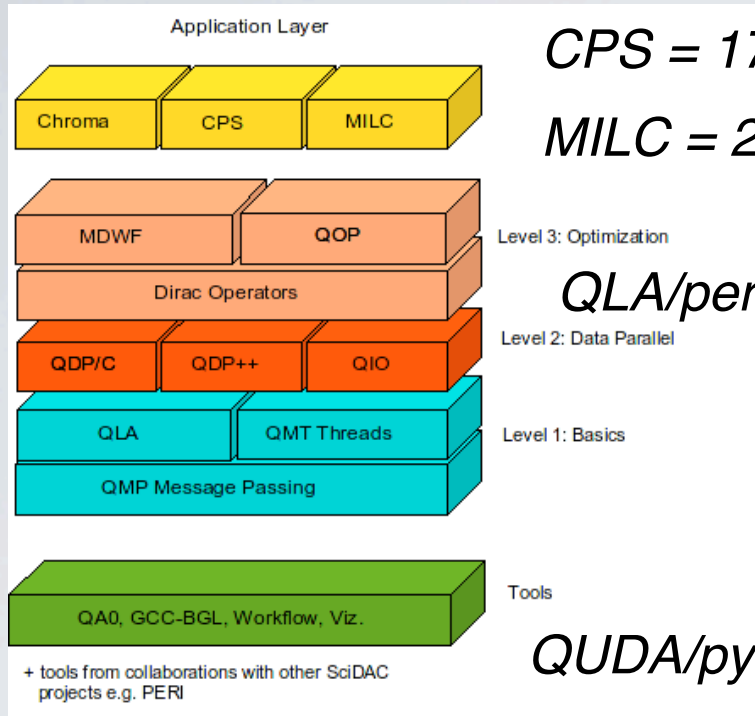
Chroma = 4856 files

CPS = 1749 files

MILC = 2300 files

QLA/perl = 23000 files

QUDA/python = 221 files



- **High Performance** Computing from TMC to GPUs to Extreme Scales I hope!

- **NEEDS:** **Tools** for Heterogeneous computing. **Early** access to new hardware prototypes. **Uniform** environment for access to machines and file transfer, etc.

